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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,734	11/30/2001	Bin Zhao	12569-16/NEC	7943

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EXAMINER

SHAHER, RICKY D

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/016,734

Applicant(s)

ZHAO, BIN

Examiner

Ricky D. Shafer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 9 and 10, "the polarization rotator" lacks proper antecedent basis.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 8, 9, 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Jameson ('830).

Jameson discloses an optical device comprising a birefringent element assembly (14) for providing two output components which are generally orthogonal, a polarization rotator (16) and a reflector (24) configured to direct the two components back through the birefringent assembly.

Note figures 1 to 2H and the associated description thereof.

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4. Claims 1, 2, 5-8, 10, 11, 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al ('005).

Cheng et al discloses an optical device comprising a birefringent element assembly (12) for providing two output components which are generally orthogonal, a polarization rotator (16b) and a reflector (22 or 62) configured to direct the two components back through the birefringent assembly, wherein said assembly includes at least one other birefringent element (18). Note figures 1 to 1C and 6 along with the associated description thereof.

5. Claims 1, 2, 5, 6, 8, 11, 12, 14 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al ('340).

Cheng et al discloses an optical device comprising a birefringent element assembly (24, 24A) for providing two output components which are generally orthogonal, a polarization rotator (34) and a reflector (36) configured to direct the two components back through the birefringent assembly, wherein said assembly includes at least two other birefringent elements [(24B and 32A)]. Note figures 2A to 3C and the associated description thereof.

6. Claims 1, 2, 8, 11, and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Li ('313).

Li discloses an optical device comprising a birefringent element assembly (730) for providing two output components which are generally orthogonal, a polarization rotator (746), a polarization beam displacer (750) and a reflector (780) configured to direct the two components

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back through the birefringent assembly. Note figures 7A and 7B and the associated description thereof.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li ('313).

Li discloses all of the subject matter claimed, note the above explanation, except for explicitly stating that the polarization rotator comprises at least one waveplate.

It is well known that "Faraday rotators" and "half-wave waveplates" are art recognized functional equivalents in the same field of endeavor for the purpose of rotating a polarization component by a predetermined amount.

Therefore, it would have been obvious and/or within the level of one of ordinary skill in the art at the time the invention was made to modify the polarization element (Faraday rotator) of Li to include a typical half-wave waveplate, as is commonly used and employed in the optical art, in order to obtain a functional equivalent polarization component rotation at reduced manufacturing costs. Note In re Ruff, 188 U.S.P.Q. 343 (CCPA 1958).

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As to the limitations of claims 3 and 7 that the “reflector” comprises a prism, it is well known to use “mirrors” and “prisms” in the same field of endeavor for the purpose redirecting light back through a birefringent assembly.

Therefore, it would have been obvious and/or within the level of one of ordinary skill in the art at the time the invention was made to modify the reflector (mirror) of Li to include a typical prism, as is commonly used and employed in the optical art, to similarly redirect light back through the birefringent assembly with greater spacing between the rays of lights in order to reduce the potential of optical interference between the light rays.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1, 2 and 5-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-12 of U.S. Patent No. 6,563,641. Although the conflicting claims are not identical, they are not patentably distinct from each other because the present application (10/016,734) discloses no additional invention or discovery other than what was already claimed and patented in U.S. Patent 6,563,641 or what would have been obvious to one of ordinary skill in the art at the time the invention was made.

U.S. Patent 6,563,641 discloses an interleaver comprising a birefringent element assembly [(20) or (60)] having three birefringent elements, a polarization rotator including a half-wave waveplate (29) or quarter-wave waveplate (56), a reflective device including a prism (27) or a mirror (57), respectively, and the arrangement thereof. Note figures 9 and 25.

11. The disclosure is objected to because of the following informalities: (A) elements 55 and 56, shown in figure 25, each lack a proper written description.

Appropriate correction is required.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 5,768,005, U.S. Patent 5,872,878, U.S. Patent 6,049,427, U.S. Patent 6,075,647 and U.S. Patent 6,154,581 each teach it is known to employ a prism in the same field of endeavor for the purpose of redirecting light back through a birefringent assembly.

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13. Any inquiry concerning this communication should be directed to R. D. Shafer at telephone number (703) 308-4813.

RDS

September 27, 2003

R. D. Shafer
R. D. SHAFER
PATENT ATTORNEY
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